

1 IN THE CLAIMS:

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3 Please cancel claims 13-23 without prejudice or disclaimer of their subject matters.

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5 Please amend claims 1 and 7 as follows:

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7 1. (Amended) A gas-liquid contact system, comprising:

8 a contactor, including contact media, a gas inlet and a gas outlet, a liquid inlet and a

9 liquid outlet, wherein the liquid inlet admits liquid above the contact media and the gas inlet

10 admits gas below the contact media, and the liquid and gas flow through the contact media such

11 that the gas leaves through the gas outlet in saturated state;

12 a heater;

13 a chiller for chilling the liquid outside the contactor;

14 a gas outlet line connecting the gas outlet to the heater;

15 a liquid outlet line connecting the liquid outlet to the chiller, wherein the liquid flows in a

16 closed loop through the liquid inlet, the contactor, the liquid outlet and the chiller;

17 a first gas temperature sensor associated with the gas outlet line and upstream of the
18 heater;19 a second gas temperature sensor associated with the gas outlet line and downstream of
20 the heater; and

21 a controller coupled to the first and second gas temperature sensors and the heater,

22 wherein the controller and adjusts the heater to deliver the gas at a desired temperature and
23 relative humidity.

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25 2. The system of claim 1, further comprising a sprinkler above the contact media to

26 distribute the liquid uniformly on the contact media, a pump located between the chiller and the

27 sprinkler to supply liquid to the sprinkler, and a gas blower to supply gas to the gas inlet.

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29 3. The system of claim 2, wherein the housing is cylindrical in shape, and the

30 sprinkler includes at least one arm with a plurality of orifices along the arm and pointed between

parallel and opposite the top of the contact media and wherein the sprinkler engages in self-

1 rotation from reactive force exerted against the arm(s) from distribution of the liquid from the
2 orifices.

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4 4. The system of claim 1, further comprising a reservoir with a make-up inlet line to
5 introduce liquid into the reservoir and a removal outlet line to remove liquid from the reservoir, a
6 low sensor which generates a signal to a liquid supply means whenever the level of the liquid is
7 low to supply additional liquid through the make-up inlet to the reservoir, a high sensor which
8 generates a signal whenever the level of the liquid is too high to remove liquid through the
9 removal inlet from the reservoir.

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11 5. The system of claim 1, wherein the controller sends a signal to a liquid supply
12 means to admit fresh liquid from the supply means at periodic times to maintain liquid purity
13 requirements and such that the chiller can maintain the liquid at a desired temperature.

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15 6. The system of claim 1, 2, 3, 4, or 5, wherein the contact media is tower packing.

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17 7. (Amended) A system of controlling the temperature, the relative humidity, and the
18 cleanliness of air, comprising:

19 an air-water contactor, including a housing with contact media, an air inlet and an air
20 outlet, a water inlet and a water outlet, wherein the water inlet admits [a] water above the
21 contact media and the air inlet admits air below the contact media, and wherein the water
22 makes direct contact with the air in the contactor and the water and air flow through the contact
23 media such that the air leaves through the air outlet in saturated state;

24 a heater;

25 a chiller for chilling the water apart from the contact media;

26 a filter;

27 an air outlet line connecting the air outlet to the heater;

28 a water outlet line connecting the water outlet to the chiller; wherein the water flows in a
29 closed loop through the contactor and the chiller;

30 a first air temperature sensor associated with the air outlet line and upstream from the
heater;

1 a second air temperature sensor associated with the air outlet line and downstream from
2 the heater; and

3 a controller coupled to the first and second air temperature sensors, the heater, and the
4 chiller, wherein the controller adjusts the heater and chiller to deliver air at a desired
5 temperature and relative humidity, and wherein the filter is associated with the air outlet and
6 downstream from the heater.

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8 8. The system of claim 7, further comprising a sprinkler above the contact media to
9 distribute the water uniformly on the contact media, a pump located upstream from the chiller to
10 supply water to the sprinkler, and an air blower located between the heater and the filter.

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12 9. The system of claim 8, wherein the housing is cylindrical in shape, and the
13 sprinkler includes at least one arm with a plurality of orifices along the arm and pointed between
14 parallel and opposite the top of the contact media and wherein the sprinkler engages in self-
15 rotation from reactive force exerted against the arm(s) from distribution of the water from the
16 orifices

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18 10. The system of claim 7, further comprising a reservoir with a make-up inlet line to
19 introduce water into the reservoir and a removal outlet line to remove water from the reservoir, a
20 low sensor which generates a signal to a water supply means whenever the level of the water is
21 low to supply additional water through the make-up inlet to the reservoir, a high sensor which
22 generates a signal whenever the level of the water is too high to remove water through the
23 removal inlet from the reservoir.

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25 11. The system of claim 7, wherein the controller sends a signal to a water supply
26 means to admit fresh water from the supply means at periodic times to maintain water purity
27 requirements and such that the chiller can maintain the water at a desired temperature.

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29 12. The system of claim 7, 8, 9, 10, 11, wherein the contact media is tower packing.

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Please add new claims 24-26 as follows:

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2 --24. A system for controlling local environment, comprising:

3 a contactor, including contact media, an air inlet and an air outlet, a water inlet and a
4 water outlet, wherein the water inlet admits water above the contact media and the air inlet
5 admits air below the contact media, and wherein the water makes direct contact with the air in
6 the contactor as the water and air flow through the contact media such that the air leaves the air
7 outlet in saturated state;

8 a heater;

9 a chiller including a heater/exchanger disposed outside the contactor;

10 an air outlet line connecting the air outlet to the heater;

11 a water outlet line connecting the water outlet to the chiller, wherein the water flows in a
12 closed-loop through the water inlet, the contactor, the water outlet and the chiller;13 a first air temperature sensor associated with the air outlet line and upstream of the
14 heater;15 a second air temperature sensor associated with the air outlet line and downstream of
16 the heater;

17 a water temperature sensor associated with the water in the closed-loop circulation; and

18 a controller coupled to the first and second air temperature sensors and the heater, and
19 coupled to the temperature sensor and the chiller, wherein the controller adjusts the heater and
20 the chiller to deliver the air at a desired temperature and relative humidity.

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22 25. A system for controlling local environment, comprising:

23 a contactor, including a non-temperature controlled contact media, an air inlet and an air
24 outlet, a water inlet and a water outlet, wherein the water inlet admits water above the contact
25 media and the air inlet admits air below the contact media, and wherein the water makes direct
26 contact with the air in the contactor as the water and the air flow through the non-temperature
27 controlled contact media such that the air leaves through the air outlet in saturated state;

28 a heater;

29 a chiller for adjusting the temperature of the water apart from the contact media;

30 an air outlet line connecting the air outlet to the heater;

1 a water outlet line connecting the water outlet to the chiller, wherein the water flows in a
2 closed-loop through the water inlet, the contactor, the water outlet and the chiller;
3 a first air temperature sensor associated with the air outlet line and upstream of the
4 heater;
5 a second air temperature sensor associated with the air outlet line and downstream of
6 the heater;
7 a water temperature sensor associated with the water in the closed-loop circulation; and
8 a controller coupled to the first and second air temperature sensors and the heater, and
9 coupled to the water temperature sensor and the chiller, wherein the controller adjusts the
10 heater and the chiller to deliver the air at a desired temperature and relative humidity.
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12 26. The system of claim 1, further comprising a filter associated with the air outlet
13 and downstream from the heater.--
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